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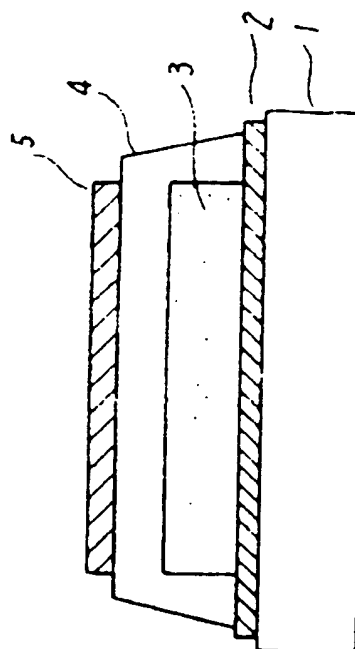
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APPLICANT : HITACHI LTD;

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TITLE : FORMATION OF ELECTRODE FOR  
THIN-FILM LITHIUM BATTERY



ABSTRACT : PURPOSE: To obtain an electrode, which has an excellent electric contact and a high mechanical adhesion, by interposing beforehand a film made of the original metal of a positive electrode material between the positive electrode material and a positive current-collecting body of a thin-film lithium battery, the positive electrode of which is prepared from a metal chalcogenide or a metal oxide.

CONSTITUTION: After a titanium film 2 with about  $0.1\mu\text{m}$  thickness is formed on an iron plate 1 with  $0.4\text{mm}$  thickness,  $\text{TiS}_2$  is formed on the film 2 into a film 3 of around  $3\mu\text{m}$  thickness by the CVD method. Next, a solid electrolyte material represented by the formula,  $(1-X)\text{Li}_4\text{SiO}_4 \cdot X\text{Li}_3\text{PO}_4$  ( $0 < X < 1$ ), is formed over the film 3 into a film 4 with around  $2\mu\text{m}$  thickness by sputtering. After that, lithium is formed on the film 4 into a film 5 with around  $1\mu\text{m}$  thickness by a vapor-deposition method, thereby obtaining a basic structure for a thin-film lithium battery. As a result of measurement carried out in a dry atmosphere on the basic characteristics of the battery such as open-circuit voltage and short-circuit current, at room temperature, an open-circuit voltage of  $2.4\text{V}$  and a short-circuit current of  $3\text{mA}/\text{cm}^2$  were obtained.

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